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ART AND INDUSTRY

FINE art may be defined as skilled production which pleases. The word *ars* originally signified the act of joining, as in carpentry or masonry. It then came to mean skilful joining, and finally stress was laid upon the character of the workmanship judged by canons of its own, rather than by considerations of the ultimate utility of the object produced. Many artists admit that both industry and art require skill, but hold that this skill is expended in different directions: in the case of industrial art, to the end of producing something useful; in the case of fine art, the creation of something which gives satisfaction in and for itself. This view frequently implies that the useful and the beautiful are mutually exclusive: not merely that certain objects are beautiful and others useful and that in rare instances they may be at the same time both beautiful and useful, but that the highest form of beauty is uncorrupted by any utility.

I

Mr. Brown, in his valuable little book on "The Fine Arts," says that art is freedom in skilled production. Artistic activity is "indulged in for its own sake, and not under the pressure of any material needs." Art is play "in the sense that it is a free and spontāneous activity, not serving a directly useful end, but having its rise in a state of ideal excitement. We are not driven to its practise by any outward or inward compulsion." Freedom here, however, does not mean getting away from all ends, from all definite motives and particular meanings. Free artistic activity does not mean aimless activity. An activity is free when it has found a relatively adequate embodiment, a medium of expression which is approximately organic with its own significance or end—free in the sense that it is controlled from within rather than from without.

Historically art is an expression of the unusual skill made possible by leisure, by comparative relief from the fierce immediacy of the struggle for existence. But even this skill of leisure operates

under conditions: it is dependent upon naturalistic, technical, religious, practical motives, and is an expression of popular feelings and ideals. Whenever we say that skilled production comes to be valued for its own sake, we mean that the artistic form so adequately expresses the naturalistic, technical, religious, practical, or other content that it seems its inevitable embodiment. Only because it is thus organic is it esthetically satisfying.

Freedom means, not that production is esthetic in proportion to its uselessness, that is, in proportion to its freedom *from* the various motives mentioned in the preceding paragraph, but in the sense that the artistic activity embodies these motives so adequately that the stress and tension characteristic of other modes of consciousness are lost in the ease and spontaneity of the esthetic repose. Art is not simply primitive wonder and mystery idealized, nor is it a mere by-product of the reflective process: it is a central fact and legitimate outcome of any experience. Its spontaneous character is the outcome of relatively automatic action, of habits that have been mediated in consciousness until the intellectual processes involved have become comparatively smooth and familiar. Carlyle seems to have had this idea in mind when he said that one does not do a thing perfectly until he can do it unconsciously. But in the case of art this is true only in a relative sense, since absolutely automatic action would be unconscious and therefore not esthetic. The esthetic-artistic consciousness exhibits experience in the process, as it were, of just slipping over into the unconsciousness of automatic action.

Artistic activity is autotelic, controlled by habits and ideals operating from within. The beats of a bird's wing, the bounds of an antelope, the steps of a graceful woman, succeed each other with beautiful smoothness, says Mr. Brown, but they are not artistic unless there is "an inward control." The raw material of this rhythmic activity must be "disciplined into a certain distinctness of form by the principle of 'order' till it becomes a rational product." In other words, smooth, rhythmic action is not artistic and esthetic save as the expression of an idea or meaning. If, however, this idea is present in too immediate or direct a way, the activity becomes practical or scientific, or takes some other non-esthetic form. The end must not be too explicitly or too strenuously present. It must already have been so well organized into the activity that it has attained a certain ease and freedom of operation.

On the other hand, this ease and freedom always presupposes a previous mediation of the idea or meaning in consciousness: it is the freedom of habitual rather than of instinctive action, and this is the fundamental distinction between play and art. When we say that an activity has become its own end or is carried on for its own sake,

we mean, therefore, that it has become relatively habitual. The wonderful technique of artistic detail which characterizes Japanese art is no accident: it is to be explained in connection with the skill required for the graphic reproduction of their language. Only such deeply ingrained habits can become freed for artistic purposes. The reason for the dominance of naturalistic motives in hyperborean art is to be found in the fact that these motives stand for the deepest habits of the every-day life of these people in their struggle for existence.

When a comparative leisure has been won by a relative relief from the economic struggle for the necessities of existence, the motor habits that have been built up in connection with these activities persist in the form of unconscious or semi-conscious instincts and impulses urgent for expression. The motor tendencies remain long after the occasion for their economic use has disappeared, and they seek outlet in other modes. What more natural than that these habits of skilled production of implements of warfare and industry should overflow into the embellishment and reproduction of these very forms in the more ideal ways which we find expressed in art?

Experience becomes esthetic when its processes have been carried to the point at which the symbols used are an approximately adequate expression of the meaning symbolized. The esthetic pleasure which primitive peoples take in their weapons and tools lies in the recognition of their relative fitness of form to their purpose. As long as they did not serve such purpose with a degree of success, attention would be directed to their manufacture—there is no leisure and no surplus of skill to devote to embellishment. But once, by their use, let there be won a superabundance of food, of shelter and security, and the success feelings connected therewith are read over into these objects and they become beautiful. This would seem to embody the truth of William Morris's saying that art is an expression of man's joy in his labor, and of Schiller's remark that in the esthetic field we see man playing at his work.

The beauty of nature also is capable of a rational interpretation from this point of view. Those natural objects or processes are beautiful which are an approximately adequate realization of the end which they suggest or imply. As Fechner phrased it in his law of economy, that is esthetically pleasing which is physiologically correct and the expression of the least possible friction and constraint. By analogy, the physical environment, especially animal and plant forms, become beautiful because the pleasurable feelings connected with gaining mastery over them are read over into them. Thus we see both the objects and the instruments of the primitive struggle for existence lifted to the esthetic plane by reason of the opportunity for

free contemplation and reproduction of them made possible by the leisure and skill won in connection with this very struggle.

II

We have here what Professor Gore has very aptly called "the esthetic survival of a formerly useful occupation." Attention has frequently been directed to the originally utilitarian or practical basis of most of our esthetic appreciations and art productions. "All esthetic activities are rudiments of some useful function," says Spiller. "The appliances of one era serve as embellishments to the next," says Spencer. The latter writer goes on to point out that our parks, kept as nearly as possible in a state of nature, perpetuate what had only utilitarian associations in the mind of primitive man. A picnic is "a temporary return to an aboriginal condition." The tyrannies, feuds, and narrow escapes which were quite prosaic realities to a previous age furnish material for literary treatment to-day. "The once useful but now purely ornamental heraldic symbols" illustrate the fact that "nearly every notable product of the past has assumed a decorative character." "Every one," says Professor Gore, "has probably experienced the kind of esthetic gratification one has in doing over again, under very different conditions, something that was originally distasteful, or in living over again in the imagination something that in the first place was a hardship."

The question naturally arises: Why this estheticizing of past utilities, why this metamorphosis of the useful into the beautiful? Why does distance in time, as in space, lend enchantment? What, for example, is the significance of the fact that the decline of manual labor in the industrial world is accompanied by the advance of manual training in the educational world and by the enhanced value of hand-made products in the artistic world? Or, to turn it about, what is the meaning of the fact that with the advance of machinofacture in the industrial world, manufacture has become a fine art?

The question is answered by saying that activities originally utilitarian become esthetic when they are performed with relative ease, and optionally, by reason of being freed from the necessity of serving the more immediate biological or economic needs. We continue to carry out reactions which, though no longer indispensable to life, are yet agreeable when performed because they are deeply ingrained as habits, the functioning of habits within normal limits being pleasurable. It is pleasurable because it is easy; it is easy because it is familiar and habitual; it is esthetic because, in addition to this, it has a comparatively rich content of meaning and associations and is therefore stimulating.

Propensities and customs, funded during long periods of time,

are not so readily changed as the external conditions of the situation, hence there is a certain momentum of habit over into the new environment and even a tendency to assimilate the environing objects and activities to deep-seated apperceptive systems. It is requisite, however, if originally utilitarian activities and objects are to persist as esthetic, that they shall make sufficient demand upon the attention to be stimulating. Where this is not the case, the reactions tend to become automatic and the objects to pass unnoticed. As Professor Gore says, it is a matter of comparative indifference as to whether the arbiters of taste will continue to fill their houses with hand-made furniture, hand-made books, and hand-made bric-a-brac. The real question is whether this represents a mere repetition of the thing which it is easiest to do, or represents a constructive insight into the real essence and evolution of culture.

III

The same principle explains the fact that the luxuries of yesterday become the necessities of to-day. The electric button, the telephone, the bicycle, the automobile, refinements of the toilet and cuisine which once were superfluities enjoyed only by the rich, become the unheeded instruments by which men press forward to ever more discriminative values. Here, too, if the activity is capable at once of a wide range and a fine detail of adjustability, or if the object is rich in suggestiveness and associations, it may survive this mechanizing effect of familiarity: physical exercise of the recreative sort and beauty of feature in the human face are examples of such survival. But in general the relativity of esthetic appreciation to the evolution of organic needs is appalling until we reflect that by this same process are also being evolved the finer appreciations of a higher level.

Spencer says: "Whatever is performing some active function now, or has very recently performed one, does not possess the ornamental character; and is, consequently, inapplicable to any purpose of which beauty is the aim." And Grant Allen writes: "The esthetically beautiful is that which affords the maximum of stimulation with the minimum of fatigue or waste, in processes not directly connected with vital functions." According to Professor Fite, "the esthetic or practical character of a want, the beautiful or useful character of an object, the artistic or industrial character of a form of activity, depends upon the extent to which it constitutes a fundamental feature in one's organized system of habits." "Nothing that appears in human life is completely unrelated to the organic processes," but "some impulses are more nearly related to the life-process than others." "We have, therefore, instead of an absolute distinc-

tion of esthetic and practical realities, a graded continuum, with the distinctively practical at one end in the needs more nearly organized into a system, and the purely esthetic at the other in those least related to the organic system, while between the two are those whose esthetic or practical character is a matter of doubt." "The transformation of esthetic tastes into relatively organic needs appears, then, as one of the features of this process." "The process of evolution means . . . a constant elaboration of wants. . . . As a new impulse makes itself felt, and a new object is desired, it has first the appearance of the ideal and the beautiful; then, as the impulse becomes more imperative, the object becomes finally a necessary element in the life-process itself." The dress-coat, moderate bathing and sanitary appliances, fine China and table linen, changes of plates for different kinds of food, a good speaking voice, harmony in combinations of color, etc., are thus passing from the sphere of luxuries into that of daily necessities. "Thus it happens that needs that were at first purely esthetic and, as Kant puts it, disinterested, become interested and organic and hardly less necessary to the life-process than food or sleep."

Here we have the converse of the law of esthetic survival. There is but one stricture to be made. It is not true that the esthetic qualities and activities are less organically related to the life-process than the practical and industrial. The differentia lies, not in the degree of their organic relationship, but in another characteristic. The esthetic exhibits the culmination, the relative perfection, of such organization, the differentia lying in the fact that the qualities called beautiful are less stressfully related to the life-process: it is when the relationship is at once most organic and relieved of painful stress while yet stimulating, that the conditions are present for its becoming beautiful.

"The aim of industry is to live well," says Professor Santayana; therefore it flowers naturally into art. "Liberal arts bring to spiritual fruition the matter which either nature or industry has prepared and rendered propitious." "Art is simply adequate industry; it arises when industry is carried out to the satisfaction of all human demands, even of those incidental sensuous demands which we call esthetic and which a brutal industry, in its haste, may despise or ignore."

Industry, as we are most familiar with it in this age of commercialism and machinofacture, has a double or at least an ambiguous motive. It aims above everything else to produce as many objects as possible of a given kind as cheaply as possible, for the sake of the margin of money profit. Only in comparatively rare instances does the motive consciously operate of producing something as perfect as

possible irrespective of cost. Under such conditions we may sympathize with the feeling of the artist and esthete, that fine art has very little to do with industrial art and is dependent upon some "vision from the blue" rather than upon any principle intrinsic to industry as such.

But however much we may extenuate the feeling, this point of view is wrong, so far as method is concerned, when art is set in a relation of antagonism to industry: this would be to kill the goose that lays the golden egg. Fine art is a direct outgrowth of good workmanship: it is fineness of skill. Industry gives us as directly as possible the product useful for the immediate economic end: this may be hard and harsh and ugly. But art is this same industry, not in such a hurry about the result, taking time to refine and soften and finish its creations in pleasing forms. In the words of Professor Dewey, "When the imagination is brought to bear on the work of the artisan, making it the expression of a thought, and when there is perfect union between the thought and the expression, the result is art."

What the primitive man falls to doing under conditions of enhanced emotional consciousness naturally follows the lines of native gift (instinct) and acquired skill (habit), expressing themselves in outbursts of impulsive activity. He whittles out a shaft and chips a flint tip as he has under the stress of the practical exigencies of the chase. But he whittles the arrow differently now. His exalted emotional state is reflected in his work. There is a back-stroke or return-wave of what on the negative side may be interpreted as the pleasurable sense of relief and leisure and freedom that come from the suspension of the struggle to supply the immediately pressing needs of the organism, what on the positive side may be regarded as the momentum of habit with the pleasurable consciousness of triumph, the success feeling, that comes from the sense of adequacy and spontaneity in operating along the lines of skilled and habitual response. There is a retroactive effect upon the utilitarian and industrial processes, giving them an enhanced value for appreciation, and thus finally a more propitious form in production. Art, in other words, is the back-stroke of industry upon itself, the recoil of the skill of its method upon its own subject-matter, the reflection upon nature of the impassioned light in the countenance of science.

IV

The individual and personal touch in a work of art simply represents the climax of this adequacy in skilled production. It is not essential that a work of art should be produced immediately by the human hand. What difference does it make whether you interpolate

between the artist and his medium a pen, a brush, a chisel, or a complicated machine run by steam or electricity? Nor need a work of art be wholly the product of one individual. The important point is the adequacy of the expression, not the personality of the individual who happens to be the last link in the chain of productive activity. Individuality, significance, characteristic quality, not personality, is the differentia of fine art. There is no limit to the use of machinery in artistic production, as long as such machinery fulfils its true function as a mere extension of the motor organs of the artist. It is not the fact that an object is produced by machinofacture rather than by hand, nor the fact that it is a copy mechanically reproduced, that renders it less artistic; its artistic quality depends on whether it is an adequate expression of a meaning, not on the character of the means by which it is produced. The introduction of steel beams and girders into the structure of modern buildings does not render them less artistic if this change in structural character is reflected in the decorative detail: the bad art lies in covering up this wonderful web of structural lines with a superficial veneer of brick and stone modeled on past types instead of developing its own artistic potentialities. The same principle applies to mechanical music and photography—indeed to all the modern applications of machinery to artistic production. The fear of vulgarization is groundless. Art is not degraded by becoming public and social. It is the relative inadequacy of the methods of reproduction that leads artists to deplore the multiplication of copies of the great masters.

The reason the machine-made article is not artistic is because it gives you a type without individualization: the universal is not particularized in an individual case. For many purposes it would be absurd to substitute hand-made for machine-made articles, just because the end is adequately met by the latter—congruously in relation to current standards. But until a man can more organically express himself through the machine than is now ordinarily the case, the machine-made product will not be regarded as art. It is not only conceivable, however, that the time will come, but there are evidences that the machine is already becoming in some fields, such as magazine illustration, a more adequate expression of man's meanings than any of the old manual techniques.

"It is impossible to believe," as Mr. Bosanquet says, "that just as the sense of beauty has become deeper and stronger than ever before, the productive capacity of art has received its death-blow." "Even machinery has its good tidings for us, if rightly used. Many of the reforming estheticians seem to me to forget that it is worse to do by hand what can be well done by machinery, than to do by

machinery what can only be done by hand. In the latter case you try to make a machine do a man's work, which is impossible. In the former you make a man do a machine's work, which is immoral. Whatever can be done (that is properly done) by machinery, ought to be done by machinery. The present system combines both evils. But what is needed is not to join the ranks of the machine-breakers, but to draw the line rightly between mechanical and non-mechanical production. Some critics are fond of saying that we make nothing well but the instruments of war. They omit one class of appliances, the instruments of science. A compound microscope of the present day is one of the greatest triumphs of intellect in workmanship that the world has ever seen."

Beauty, in a word, is only a higher usefulness—utility seen at arm's length. Life without industry may or may not be guilt, but industry without art is certainly brutality. The aim of art is not only to tell the true thing but to adorn the useful one. Anything which is well adapted to its purpose is on the verge of becoming beautiful. The idealization of industrial activities and objects in art forms means that they are to be humanized, socialized, and generalized in their cosmic significance. The limitation of industrial art as it is carried on by the artisan, usually through no fault of his own, is that he does not see the cultural value of what he is doing: he is ignorant of the relation of the particular manipulations which he is compelled to make to the other steps in the process and to the finished product. The artisan may become an artist only by coming to see the significance of what he is doing in relation to the nature of the materials with which he is working and in relation to the uses to which the product is to be put in the total life of society. This is all that is necessary to bring out that instinct of workmanship which is the very essence of the creations of fine art. If socialism will do this for industry, as Mr. H. G. Wells thinks, then socialism will inaugurate a new era of fine art.

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PRAGMATISM AND SOCIAL SCIENCE

THE field now occupied by the social sciences, morality, logic and philosophy was in the eighteenth century regarded as one discipline and discussed from a single viewpoint. Out of the common traditions of this old moral philosophy the various social sciences and types of philosophy have arisen. There are many views in the various fields that show the influence of the common background from

which they were all derived, yet the specialization invoked by the example of the physical sciences has produced the dominant tendencies found in them. Each group has its own associations and organs, goes its own way, and sets its own standards. This isolation has brought some advantages and many evils. To divide a common field into parts leads to accurate knowledge of details, but it destroys the basis on which action depends. There is but one society and all are parts of it. Any conclusions we draw apply to the whole society and are verified in the daily actions of men, not penned up within some narrow precinct.

It is the emphasis of premises instead of consequences that has divided the old moral philosophy into so many parts. Each so-called science has its special premises from which, by a chain of reasoning, an artificial man, society, or nature is constructed. The so-called economic man and the economic society in which he is supposed to exist are good illustrations of this tendency. Each special science has such an artificial man and views society in the same cramped way. There is no other manner in which premises can be traced and made to seem as dominant as is demanded by the special science in question.

This emphasis of premises is due to the success of Newton's proof that gravitation is the cause of the movement of the heavenly bodies. All the scientists of the latter part of the eighteenth century were filled with wonder at the boldness of this generalization and sought through a corresponding premise to attain the same result in their field. Kant was as much under the influence of this idea as were Ricardo and Comte. Modern rational tendencies could not have arisen but for Newton and his law. As a result we have the isolation now manifested in the various social sciences and philosophy, each with a creed and none with the power to survey the whole field of human action. Physical science can isolate and experiment; social science can not. It must therefore begin with consequences and move back to origins. A comprehensive view is the only one that can successfully carry through this reverse movement.

The present situation is made for us by these facts. The prime obstacle to future progress is the isolation of workers into special groups, each with premises of which they feel sure, but with few conclusions of import to the great social unit of which we are parts. Against this isolation of workers a reaction has set in, with the result that in each field there are insurgents in revolt against conclusions drawn from the meager data that each special science affords. The contrast of "stand-patters" and insurgents, now so familiar in politics, represents the attitude found in every science. The conservatives rejoice in the emphasis of old truth and hold rigidly to the divisions that the past century has devised. The insurgents, however,

are partly held by the charm of the old thought, and yet so discontented that they break through its logic and reject its data at particular points. It is the weakness of insurgency that it occupies a false position due to its adhesion to the old in principle, while breaking away from it in matters of detail. If the whole antecedent scheme with its logic and methods is overthrown, the new is no longer insurgency, but a rival scheme with its own logic and data. Such a reconstruction stands ahead of us, but is not yet realized in any field. The insurgents still regard themselves as economists, sociologists, moralists, or philosophers, depending on the discipline, education, or consciousness of kind that binds them to the group in which they find themselves.

As insurgents, each group of objectors is bound to fail. It is only as they get outside of the narrow precincts of their special sciences and unite on a common platform that they can drive home the changes in social thought in which all are interested. Virtually the same contest is to be found in every field. Under different names the same ideas are being enunciated, and they all express, each in his own way, the opposition to traditional thought upon which their insurgency is based. I have been fighting for twenty years as an insurgent in economics. It is interesting to see the ways in which the conservatives have fought off the change that must inevitably come. They have yielded just enough to avoid defeat, and yet managed to hold every essential doctrine in their creed. Several times I thought their position was undermined, but each time, through a new alignment and the seizure of new terms to express old ideas, they have won a victory. This is the inevitable result of fighting old thought with its own weapons. The insurgent stirs up a temporary commotion, but finds that no permanent change follows.

My present interest has been aroused by finding that the pragmatists have within the camp of the philosophers been fighting the same battle that I as an economist have fought with my colleagues. And I believe that if they fight with philosophic tools and accept its precedents they will suffer the defeat that other insurgents have met. The grip of intellectualism is too strong to be broken by guerilla warfare. Only when the insurgents break the bonds that hold them to their various groups and unite on common grounds can they avoid the detailed defeat that each group by itself must face. We need a new social science, a new philosophy, and a new mental discipline which will face the facts of to-day without the presuppositions the old thought imposed.

To face these problems successfully demands a clear enunciation of the principles on which knowledge depends. Knowledge is either a structural problem based on certain data, or it is a genetic problem,

in which case its social origins must be laid bare. I say *social* consciously, because the mass of our knowledge we derive at second hand from the society of which we are members. Acquired knowledge is not a part of our heredity nor is its data ever fully presented to the senses. Each generation impresses its thought, language, and civilization on the next. The social process on which the continuation of this knowledge depends is outside of individuals and acts according to its own laws. A child growing up in such a society has his ideas shaped and the content of his knowledge determined by the contrasts and agreements which the social process presents and enforces. The mass of our knowledge is derived from our civilization and not from personal experience. The testing of acquired knowledge by individuals is incomplete, and could not of itself be made the basis of its reliability.

At this point, I wish to give a definition which, if accepted, will do much to clear away the confusion that exists. *Truth is a judgment about acquired knowledge.* Each person, as he is incorporated into society, has presented to him for acceptance the social knowledge upon which civilization depends. If he doubts the individual who imparts it, to him it is a lie. If he doubts the correctness of the social process by which knowledge is passed along in society, the imparted information is regarded as an error. Errors are social; lies are personal. Together they make up the data that are contrasted with truth.

This definition of truth conforms closely to social usage, although narrower than that given by philosophers. It has the advantage of confining truth judgments to one type of knowledge and thus enables us to set up definite criterions for its determination. All knowledge, however, is not acquired. In addition to the social process, there are two natural processes, the sensory process that gives us *facts* and the motor process that gives us *values.* If we limit truth judgments to acquired knowledge, knowledge is divided into three parts, each of which is given by a separate process. Truth judgments are made of the content of the social process; fact judgments are made of sensory material and value judgments depend on motor data. In every-day usage as well as in philosophic discussion, these distinctions are disregarded, but with a loss of clearness. Do we, for example, add anything to a fact by calling it a true fact? We may be uncertain whether a given sensory presentation is a fact or not, but the judgment we make is a judgment not of its truth but of its clearness and simplicity. Facts are the elements of our direct knowledge and always depend on the evidence of the senses. The mistakes we make in this regard only become truths or falsehoods when society acts on them and they thus become a part of the social process.

Values as contrasted with sensory facts are evidence of motor activity. They are judgments about the means to ends. There can be no values without ends towards which activity goes out. Utility and value are not the same, although closely related. If there is no obstacle to the acquisition of an object, it would have no value even if it had great utility. A free good, though enjoyable, has no value. From another viewpoint, a value is an economy of effort. We tend towards that form of activity that gives the greatest return for the least effort. A mode of action that reaches ends by the most available route is valuable to the actor and through it beliefs are generated that impel the act. Values expressed as judgments are beliefs. We have faith only in what we have done or in what society assures us can be done.

All knowledge is thus either truths, facts, or values, each of which is the product of a separate process. Imparted knowledge is truth, perceived knowledge is fact; knowledge acted on is value. Can we reduce these classes further and thus reduce all knowledge to an ultimate test? This is the problem on which present discussion turns. It is also evident that some simplification can take place, because truth (acquired knowledge), while carried along by the social process, must have had some origin outside of it. It is easy to see how knowledge of this kind is carried along from generation to generation and imposed on each individual in turn, but this does not account for it. The original data out of which truth arose could not have been gained from the social process itself, but must have come from one of the natural processes through which alone direct contact with nature is given. Truth in its origin must either have arisen from sensory perceptions and hence derived from facts, or it must be based on the motor activity that it generates and hence be a value. Is the test of truth antecedent facts or subsequent activity aroused by its perception? This is the problem that divides philosophers into hostile camps.

In this statement of the truth problem I have not tried to present anything new. What I have sought to do is to define truth in a way that makes a decision possible. If truth is defined as a value or as a fact, the definition determines what truth is and ignores a great mass of knowledge not coming clearly under either head. The social process gives us most of our knowledge, and about it our truth judgments are made. Is it not better to define truth in terms of this acquired knowledge and thus leave open the question whether it depends on sensory facts or motor consequences? Both of the disputants would thus have a fair chance to prove they were right by successfully accounting for acquired knowledge.

To decide this question we must put ourselves in the attitude of

a child who gets his knowledge from others, rather than in that of an investigator who tries to face nature directly. The power to investigate comes after society has given to the investigator the main data passed on from generation to generation by the social process. Judgments about what we receive from others are made earlier than those we make about our direct relations to nature. What tests, therefore, can we set up in relation to this acquired knowledge which comes to us certified by our elders, superiors, and teachers? In my opinion, the primary test of knowledge derived from others is the logical test of consistency. If two things told us are consistent, we accept them. If they disagree, we reject one of them. Logic is our most frequently used test of truth. By it we determine what we can assimilate and what we must reject. But it is not our only test: A second test is to be found in its origin of ideas. That which several judgments have in common is more firmly established than that which depends solely on its consistency. Consistency relates to the content of what others give us: agreement is the relation between what we now get from others and the body of experience and knowledge already acquired. We judge our present acquisitions of knowledge by that already assimilated and made a part of ourselves. The truth is thus at first judged by its consistency and then by its agreement with earlier knowledge. In this way we get a primary and a secondary test of truth, and through them we judge the great mass of acquired knowledge given to us by our predecessors.

While, however, consistency and agreement are our most commonly used tests of truth, they are not its final test. The end of knowledge is activity. For knowledge to become truth it must guide the recipient in the acquisition of desired ends. All new or dynamic truth is reached in this way, and to the test of workableness all truth must finally come. It is only the static, imitative element in society who are never conscious of using this test. They are so thoroughly socialized that they take what society gives and never question its authority. A static thinker is conscious only of testing the logical character of his thought. He can neglect the test of activity only because the knowledge he accepts has been tested so many times by the activity of his predecessors who have already made static knowledge logical and harmonious. He who goes beyond the accepted social beliefs of his day must also go beyond mere consistency and face nature through his activity. The final test of truth is thus the action it evokes. Belief is truth transformed into motive, and motive generates the will-power to reach its ends. Belief, truth, and action are thus bound together, and all of them are tested by the consequences they bring.

The preceding discussion assumes that knowledge is derived from

three processes, each of which has its own test and criterion of correct judgments. The social process puts us in contact with society and enables us to appropriate its accumulations and products. The psychic process gives to us the facts of perception upon which our knowledge of the external world is based. The motor process promotes adjustment and gives value to all workable knowledge. Truth, facts, and values are the three elements of knowledge, each certified to by its special process. Dogmatism consists in the attempt to make some one of these tests absolute. A monistic standard means the denial of the other two, and to get this unity skepticism must first be employed to discredit other standards. Social dogmatism accepts the traditions of society and will accept nothing as truth but what is based on authority. Psychic dogmatism takes perception as its ultimate criterion, and rejects all social data not derived from psychic phenomena. This, if carried to an extreme, is radical empiricism. Structural dogmatism accepts principles as its ultimates, and builds up the universe out of them. This, when fully worked out, becomes transcendentalism. Motor dogmatism makes values the basis of knowledge, and rejects all doctrines that fail to meet the test of activity. All these creeds are plainly defective if knowledge is not derived direct from nature, but comes to us as products of three coordinate processes. While skepticism may confuse, each of these processes will in the end make valid its claims, and thus put the various kinds of knowledge on terms of equality. Truth is not a perception, but a judgment on socially imparted data. Facts are not truth, but are perceptions certified to by our sensory mechanisms. Values, likewise, are results of our motor inheritance, and get their validity from the series of successful adjustments through which our heredity was built up.

Reality and truth are not identical, but are distinct problems. Truth is the product of a process. Reality is antecedent to all processes, and can not be derived from any one of them. Do the ultimates of our knowledge correspond to the ultimates of reality? This is a vital problem, but it is not the same as the problem of truth, which, when correctly put, asks: Shall I or shall I not accept the knowledge derived from others and certified to by them? An answer is demanded to both these questions, but only confusion can arise from trying to blend them into one or from attempts to settle both of them by the same data.

It is the answer to the second question that brings pragmatism and social science into harmony. If truth is not a perception but a judgment of acquired data, its discussion involves all the problems that lie back of social science. On the other hand, as social science leaves behind the data of its concrete sciences and looks into the

processes by which its facts are given, the social scientist must become a philosopher and treat the antecedents of knowledge as well as its manifestations. A simple but united viewpoint can thus be obtained which will blend the various groups of insurgents into one body, with one method and one measure of truth. Pragmatism must become more than pragmatism to succeed, for the truth relation can not be settled apart from other fundamental problems that recent progress has forced modern thought to face. Pragmatism, sociology, economics, and history are not distinct sciences, but merely different ways of looking at the same facts. The logic, the method, and the mode of verification are the same in all of them. They all must accept consequences as the ultimate test of truth, and these consequences are measured in the same broad field of social endeavor. To gain this end, the intellectual reliance on premises must be broken. There is thus a clear issue between the new and the old. Is truth measured through its consequences or through its antecedents? Is thought static or dynamic? Is the mind a structural unit or a genetic growth? Shall investigation proceed positively from data or skeptically from analysis and differentiation of ideas? In different terms and in many ways these questions are being asked. They all lead back to a common ground and demand the same solution. When they are answered, human thought will have advanced into a new stage and the obstacles to social progress will be much reduced.

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DISCUSSION

EXISTENCE AND FORMAL LOGIC

IN this JOURNAL for August 31, 1911, Professor Marvin propounds a new definition of the notion of "existence" in "terms of formal logic." He arrives at this by means of an analysis of the distinction between the propositions that constitute formal or "non-existential" science and those that constitute factual or "existential" science—a procedure which perhaps has a certain *prima facie* appearance of circularity. The definition thus reached I am not sure that I correctly understand; taken literally it appears to be either tautological or else inclusive of its own negation. It runs as follows: "The existent is the asserted sufficient condition of any true proposition; and accordingly a term is said to exist when it is a member of a proposition that is the asserted sufficient condition of some true proposition." By a "sufficient condition" of a proposition the context indicates that Professor Marvin means a proposition which is so

related to another proposition that the latter either implies it or is implied by it. Thus the *dictum de omni* would be a "sufficient condition" of the more specific rules of the syllogism; for they are true propositions which it implies. It does not, however, appear to be a proposition which Professor Marvin would classify as existential. It is evident, therefore, that the essential differentia of "the existent," as expressed in the proposed definition, lies in the word "asserted": the existent is an *asserted* sufficient condition. One inquires, therefore, what "asserted" here means. Obviously it can not mean "asserted to be true"; for that would, once more, apply equally to propositions of merely formal and "non-existential" truth. Yet in the passage (p. 478) where the adjective "asserted" is first introduced and partly explained, it seems to mean "asserted to be true." For the difference between existential and non-existential science is that the latter consists of propositions such as "p implies q, where we do not know whether or not p [itself a proposition] or q are true," but know only the correlation of the truth of p [whenever it happens to be true] with the truth of q. Though non-existential science is *about* propositions which are not asserted, the propositions which it makes about those propositions *are* by it asserted; it is indifferent to such a science whether p and q are true or false, but it is not indifferent to it whether the statement "p implies q" is true or false. But since the sense in which the term "asserted" is used in making the distinction between existential and non-existential science will not, as we have seen, fit into Professor Marvin's definition of the existent (as "the asserted sufficient condition of any true proposition"), the reference to that distinction does not help us to understand what "asserted" does mean in the latter formula. The only remaining sense, indeed, which readily suggests itself, is "asserted to exist" or "involving an assertion of existence"; but this, of course, in a definition of "existence," would be a pure tautology. One can not suppose, therefore, that Professor Marvin uses the word in either of these senses. Since the kernel of his whole definition is contained in the word, I hope he will tell us in what third sense he wishes the word to be understood.

But though the terms of the definition offered remain somewhat obscure, certain things that seem sufficiently clear in Professor Marvin's enterprise appear to me to justify a doubt concerning the feasibility of defining existence "only in terms of formal logic." Two of these difficulties I venture to try to set forth.

1. Two species of existential proposition are enumerated: "The first is of the form p implies q where p is asserted, the second is of the form q is asserted, p implies q, hence p is asserted." These species, furthermore, appear to be regarded as exhaustive of the

genus determined by the definition. From this it would follow that all existential propositions are propositions about implication—the implication of one proposition by another. This, of course, does not give the whole account of such propositions; it gives only their *generic* character. Their specific character, or differentia, as we have seen, is, for Professor Marvin, that one of the two propositions, about whose relations of implication the existential proposition makes an assertion, must be given from the outset as itself "asserted"; and the difficulty about this differentia has already been noted. But in any case, the generic part of the definition of a term is an essential part; and thus the proposed definition declares that existential propositions, by their essential nature, always deal with the implications between other propositions—that this is what they *mean*. This seems to me a paradoxical conclusion. I should have supposed that by "existential propositions" one meant propositions in which existence (whatever that may be) is predicated of something; that the subjects of which this predicate may be affirmed are not necessarily themselves propositions, but may be all kinds of concrete things, persons, or events; and that, whatever else this predicate may signify, the mere logical relatedness, by way of implication, between two propositions (even if one of them is "asserted") is peculiarly remote from what "we mean when we use the word 'exist' in daily life, in science," or even "in philosophy."

2. Professor Marvin (if I get the meaning of pages 490–491) holds that to make assertions about a past existence is "but to assert that data are now at hand" which "imply or are implied by" that past existence. Though he notes that some may regard these present data as constituting rather the ground than the meaning of our existential judgments about the past, he himself appears to find in this distinction no valid reason for rejecting the view indicated. And this view is apparently conceived to follow from the proposed definition of "existence." It is thus implied that an assertion that something existed in the past of which no conclusive traces now survive would be an assertion void of meaning. It would, doubtless, be an unverifiable, and therefore unreasonable, assertion; but why should one call it meaningless? The proposition: "Queen Elizabeth married Dudley, but all the material evidence of the ceremony was destroyed, and all the witnesses, direct or hearsay, are long since dead," would doubtless be a queer proposition for an historian to lay down, since by its own terms it would be incapable of proof. But surely it would be an existential proposition; it would have meaning, in the sense that every one of its terms, and their affirmed relations, are intelligible, and even that one could tell what sort of present data would be requisite in order to enable one to decide as to the truth or

falsity of the main assertion about the marriage ceremony. No concepts appear to be more clearly and confidently distinguished by our minds than that of the *meaning* of a predicate, and that of the *verifiability* of a proposition in which the given predicate is affirmed or denied of a given subject. And I can not see that any persuasive reason is offered for supposing "past existence" and "now verifiable past existence" to be a whit less distinct in meaning than are, say, "squareness" of a non-perceived object, and "now verifiable squareness." Perhaps what Professor Marvin means is that the assertion of a proposition about the past implies the truth of that proposition, and that *truth* is identical with verifiability. But we all suppose many propositions about the past to be true of which the truth can not be established; their unverifiability is never regarded as proof of their untruth. A definition of existence which requires us to give up this distinction seems to me a doubtful boon.

These difficulties, I think, arise, in spite of the admirable logical ingenuity which Professor Marvin brings to the argument, from the inherently unpromising nature of his undertaking. Formal logic is itself a non-existential science; it of itself asserts no existences, but only implications, and it does not care whether the terms of the propositions with whose implications it deals are existences or not. In this sense, therefore, it is a realm to which the whole notion of "existence" is alien. It is accordingly a rather unlikely place in which to look for aid in the elucidation of that notion. And such aid as may seem to be had there will probably be found to have been surreptitiously introduced (probably by means of a logical circle) from outside its boundaries.

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REVIEWS AND ABSTRACTS OF LITERATURE

Clever Hans (the Horse of Mr. von Osten): A Contribution to Experimental, Animal, and Human Psychology. Oskar Pfungst. With an introduction (and four supplements) by C. Stumpf. Translated by Carl L. Rahn. With a prefatory note by James R. Angell. New York: Henry Holt & Company. 1911. Pp. vi + 274.

A demonstration of the working of animal association-processes and the difficulty of their proper interpretation, more spectacular and at once more conclusive than Mr. Pfungst here presents, has yet to be recorded. His account may be read with the interest of an exciting novel, and yet with great and lasting profit by any one at all interested in animal behavior or in the problems of animal consciousness, whether his interest be that of the comparative psychologist, the naturalist, or the mere lover of domestic animals.

A retired teacher in one of the German gymnasia, of gentle birth, having an income sufficient for his maintenance, rather eccentric in his tastes but no seeker after notoriety, and without a family, made of a four-year-old horse his pet and almost his sole companion. Having become convinced in some way of the horse's conceptual ability, he undertook to teach him to count, and later to do arithmetical sums, from simple addition to square root, indicating the answers by tapping with the right fore-foot. In the beginning, large wooden "duck-pins" and the corresponding arabic figures were set before him; the number was spoken, and he was "put through" the process of tapping until he could "read" or "name the number" correctly without this assistance. He was then taught similarly to express the relation between numbers—*e. g.*, two *and* five is seven. After these processes had been mastered, Hans was next made to "learn" the alphabet, the letters being arranged in tabular form and placed before the horse, who was taught to indicate by tapping the place in horizontal and vertical rows of each letter. From this to simple "reading" and "spelling" was a short journey. Color discrimination came next, in which colored cloths were used. The horse was taught first to indicate by tapping the position in a row of cloths of the one to be chosen, and then to bring it to the questioner in his teeth. By a similar method he also "learned" the rudiments of musical harmony, informing his questioner by tapping the components of a chord; responding by head movements affirmatively or negatively to such questions as "Pleasant?" or "Unpleasant?" and showing by tapping the tones which must be changed to effect harmonization.

After four years of "education" along this line, the horse exhibited a proficiency in response to questions both from his owner and from strangers, which gained him the attention of all Germany, and made him the subject of scientific discussion and popular theorizing. Several educators soberly pronounced him the rival in intelligence of a normal child ten to twelve years old. Animal trainers and scientists both looked in vain for evidence of trickery; and his owner, who enjoyed the confidence in his honesty of all who knew him, steadily refused enormous sums offered him for Hans, and would not allow him to be exhibited for gain.

At last, in September, 1904, a committee of thirteen men, in the personnel of which were included a circus manager, a veterinary surgeon, two prominent German zoologists, two educators, and two psychologists of recognized ability—Professors Nagel and Stumpf—spent two days in investigating the horse's behavior. During part of the tests, the owner retired. At the completion of the work, the committee signed a report saying that anything in the nature of "tricks—*i. e.*, reaction to intentional signs"—was "out of the question." Further, that in their opinion, "unintentional signs of the kind at present familiar" were "likewise excluded." Also, that Mr. von Osten's method of education "has little in common with methods of training, and is patterned after the instruction given in the elementary schools"; that the case appeared "in principle to differ from any hitherto discovered," had "nothing in common with training in the usual sense of the word," and was "worthy of a serious and incisive investigation."

In November and December, 1904, a second committee, Mr. Pfungst, our author, with Dr. E. von Hornbostel and Professor Stumpf, made some further tests, in which it was found that when the horse was called upon to answer a question the answer to which was unknown to the experimenter or to any one present, he responded successfully in only 8 per cent. of his chances; while otherwise he succeeded in about 98 per cent. This at once gave rise to the suspicion that the horse in some manner was getting his cue from the experimenter or from a bystander. The next question was, What kind of cue?—*i. e.*, visual, auditory, or what not. To eliminate, first, the possibility of the horse's reacting to visual signs, he was made to wear huge blinders, which excluded from his field of vision the experimenter, who now stood behind. The horse was now utterly helpless, and his taps were made at random. The movements thus shown to have been formerly perceived were so slight, however, that only after very close observation on the part of all present were they discovered, and then by Mr. Pfungst. They proved to be very slight movements of the head, due to changes in tension of the neck-muscles, ordinarily below consciousness. In the horse's early training they were doubtless more easily sensed, however, because his master then wore habitually a hat with a very broad brim, the edge of which would describe a much greater arc than the head itself. The answers to questions expressed by head movements were found to be reactions to similar movements unconsciously made by the questioner. When these movements were inhibited, as they could be after once being noticed, the horse reacted as much at random as when the experimenter was hidden.

Mr. Pfungst here carried into the laboratory the problem of these unconscious body movements in situations of expectant interest, and obtained some very interesting results as to their character—direction, magnitude, controllability, etc. Observation, conscious or unconscious, of such changes in attitude, has doubtless spoiled many a laboratory experiment, where procedure is intended to be "without knowledge," and has also made possible the success of many a gambler and "medium."

A pathetic incident of the investigation was the grief and indignation of Mr. von Osten when the facts were laid before him. He felt, despite the expressions of confidence in his good faith published by the experimenters, that his character had been questioned and his years of work wrongfully discredited, for he could never bring himself to accept their conclusions. At his death, which occurred not many months later, he was doubtless yet unaware of the service which he had unwittingly rendered to a young science.

From one or two loosely written sentences of Mr. Pfungst, an uninitiated reader might suspect that in his opinion, because these tests had disclosed no such evidence, the horse is without color vision, "musical ability," etc. It should be hardly necessary to remind our readers that no tests worthy of the name have yet been made on color vision in the horse—or, at any rate, none have so far been published. Some crude

qualitative tests on his cousin, the ass, would indicate that the latter is quite sensitive to differences in pitch.[1]

An unfortunate point in the history of this investigation is a priority claim by Dr. Albert Moll,[2] whose published assertion is that more than a year before the report of the first committee, of which Professor Stumpf was a member, he made some tests on Hans which showed conclusively that whenever "procedure without knowledge" was had, every question elicited an incorrect response; from which he concluded that Hans was reacting to some slight involuntary and subconscious movements, such as often become the bases of suggestibility in hypnotic subjects. This conclusion he alleges he reported to the Psychological Society of Berlin, of which Professor Stumpf was a member, between the signing of the report of the first committee, in September, 1904, and the discovery reported in the following December. Conforming to the standards of etiquette accepted by so many of our German friends, Professor Stumpf in his part of the book refrains from any specific mention of Moll's allegation, although he remarks with some show of irritation that several obscure irresponsibles (in which class few of his fellow-scientists would place Dr. Moll!) had attempted to discredit him. He also uses several pages in both introduction and supplements in attempting to disprove Moll's charge that he, Stumpf, had believed at the close of the first investigation that *all* "unintentional signs" had been excluded, and that to some "telepathic agency" must the explanation of the horse's behavior be assigned. This latter feature of the controversy, into which has been injected the question of veracity or of perverse misunderstanding, does scant credit to either of the parties.

Mr. Pfungst has made a lasting contribution to both human and animal psychology, which can not be passed over lightly by any serious student in either field. Mr. Rahn's translation was a difficult task, but it has been creditably performed. The typographical appearance of the book is excellent, although a few errors slipped undetected through the proof-reader's hands. In the reviewer's opinion many readers will thank the author, the translator, and the publishers for the appearance of the work in English.

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The Philosophy of John Norris of Bemerton. FLORA ISABEL MACKINNON. Baltimore: The Review Publishing Company. 1910. Pp. 104.

This treatise belongs to *The Philosophical Monographs* series, of the *Psychological Review* publications. It is a clear and well-organized account of the philosophy of John Norris (1657–1711), rector of Bemerton, England, from 1691 until his death.

The author regards the philosophy of Norris as worthy of our interest

[1] Otto Kalischer, "Weitere Mitteilung über die Ergebnisse der Dressur als physiologischer Untersuchungsmethode u.s.w.," *Archiv für Anatomie und Physiologie, Physiologische Abteilung*, 1909.

[2] "Hypnotism," New York, Scribner's, 1910, pp. 455–458.

because it expresses certain characteristics of its age and of the approach toward later idealistic theories. His "Theory of the Ideal or Intelligible World" is "the only clear expression in English of the philosophy of the transition between dualistic and idealistic conceptions." Because of its internal inconsistencies his philosophy "can not be accurately classified as either idealism or dualism. Its whole tendency is obviously toward a system of absolute idealism." Norris stands in an intermediate position between Descartes and Locke, on the one hand, and Collier and Berkeley, on the other. Norris approaches uncritical realism in that he refuses to give up the traditional opposition of mind and matter, and "the conception of consciousness as necessarily representative of, though unconnected with, something that is beyond consciousness." His approach toward idealism is seen in his rejection of all arguments for the existence of matter, and in his "insistence on the intimate union of every finite mind with the mind of God." Collier and Berkeley made the step in advance which distinguished the thought of the eighteenth century from that of the seventeenth. "In the theory of Norris we find the tentative trying of the ground, which was the necessary preliminary to that advance."

After devoting a few pages to the life of Norris, the author presents Norris's philosophy under three main headings: (1) "The Ideal World"; (2) "The Natural or Material World"; (3) "The Objects of Knowledge." His system in its final form is found in his book entitled "An Essay towards the Theory of the Ideal or Intelligible World. Designed for two Parts: The first considering it absolutely in itself, and the second in relation to Human Understanding." The three main points of his system are: (1) the ideal world exists, (2) it is identical with the mind of God, and (3) it is connected with our minds as the source and object of knowledge. With reference to these three points the monograph states: "The first shows the origin of Norris's philosophy in that of Plato, the second its close connection with Neoplatonism and the theology of St. Augustine, and the third, its particular relation to the theory of Malebranche."

Norris's "Ideal World" is timeless and changeless, a realm of absolute ideas independent of the natural world. He follows Plato in distinguishing between the sensible and the ideal world. Norris says that the ideal world contains "eminently and after an intelligible manner, all that is in the natural world . . . whereof all things in the natural world are but as the prints and impressions; I might say the shadows." Norris uses several specific arguments for the existence of the ideal world. One of these is based upon the idea of creation. The plan of the natural world was objectively present to the mind of God. The object of God's thought was not the natural world, for it did not yet exist. The real object of God's thought was a preexisting nature, which was exhibitive and representative of the things in the natural world. Another argument for the existence of the ideal world is based upon mathematics. Mathematics presupposes perfect circles, squares, etc. These are not found in the sensible world, hence they must be in an ideal world. Norris uses another proof that might be called an argument from the nature of truth. He believed that there is absolute and necessary truth and that whatever is necessary

must be eternal. Objective truth means certain habitudes or relations of things to one another. If these relations are eternal, those simple essences, natures, or things whose relations they are, must also be eternal. These eternal essences can not exist in a sensible, changing world. Hence they do exist in an immutable, ideal world. Science treats of things not in their natural, mutable, contingent state, but in their ideal or intelligible state. The ideal world consists of ideas and eternal truths, but Norris finally identifies truth with ideas. He also identifies relations with their subjects and terms.

Norris regards the ideal world as in the mind of God. It is not the whole nature of God, for it is purely intellectual, while the nature of God includes will as well as understanding. God has in himself the "Ideas" of all things, for out of God "there is nothing but what is temporal, mutable, limited and contingent. The perfection and infinite wisdom of God imply the identity of the ideal world with the mind of God. But this ideal world is not dependent on the will of God, for "Ideas" are not producible, they are eternal, necessary, and immutable. Necessary truth is not the effect of God, but is God. God exists, for eternal ideas exist, and they can exist only in an eternal mind. Norris also argues from the possibility of God's existence to his actual existence.

Concerning the natural or material world, Norris held the existence of this realm to be less evident than that of the ideal world, for the former is contingent, and the senses do not give us certainty. We do not understand matter; it is "utterly dark, invisible, and unintelligible." Matter is distinct from spirit and can not act upon it. But Norris held that matter is not to be denied, though incapable of proof. The essence of body is extension, and extension is not a sensation, but an idea, perceived by the intellect. The material world is a copy of the ideal world, and the latter is the essence of things as at present existing. Matter is invisible, unknown, and unnecessary.

The third and last part of Norris's philosophy treated in the monograph is his epistemology. For Norris, knowledge is something absolutely fixed and stable. Thus on the nature of truth he is no pragmatist. He says: "Knowledge is the perception of truth, or of those ideal relations, wherein truth consists." The object of knowledge is incorporeal. Sensation can not be knowledge. The possible objects of knowledge are God, finite spirits, and material things. We can know God, for he, being perfect, is most intelligible. No mediating idea is required in order to know God. Norris is not definite and consistent concerning our knowledge of ourselves and other finite spirits. As to our knowledge of the natural or material world, he holds that material objects are not perceived in themselves, "and therefore we must see and perceive them as they are in their ideas." We see all things by their intelligible representatives existing eternally in the mind of God. In perceiving a particular object we have a sensation caused by God. We also have an idea. This idea is continually existing in God's mind, and he by an act of will permits us to see it at the moment when sensation is aroused. The idea is of extension only—all other attributes are merely sensation.

Norris's philosophy was influenced by three main factors: "the idealism of Plato, as traditionally conceived, the theory of Malebranche, and contemporary English philosophy."

An appendix to the monograph contains biographical notes on the Cambridge Platonists and on Malebranche, and a bibliography of the works of Norris. The style of the monograph is clear, logical, and forcible. The treatise is an excellent presentation, summary, and criticism of this philosophy of a transitional period.

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JOURNALS AND NEW BOOKS

AMERICAN JOURNAL OF PSYCHOLOGY. July, 1911. *Thermal Intensity and the Area of Stimulus* (pp. 325–332): SARAH E. BARNHOLT and MADISON BENTLEY. – Thermal intensity may depend on the number of temperature organs stimulated, for the warm and cold seems more intense on large areas. The strength of the sensation is determined by the most highly tuned organs involved. Intensity of large areas seems to be due to the favorable conditions for conduction. *Consciousness under Anesthetics* (pp. 333–345): EDMUND JACOBSON. – A report of experiences under the influence of nitrous oxide and air. Struggling, groaning, and reactions of that kind may be conscious, even though not remembered afterward. *On the Intensity of Images* (pp. 346–368): ALMA DE VRIES SCHAUB. – A laboratory study of images in which it seems that they have an intensity quality much like sensations. *Color Sensations of the Partially Color-blind* (pp. 369–407): SAMUEL P. HAYES. – A thorough study of a case of partial color-blindness with a general discussion on defective color vision. Partial color-blindness is not identical with dichromatism. Selected bibliography. *Recent Freudian Literature* (pp. 408–443): RUDOLPH ACHER. – This series includes extensive reviews of the following: S. Freud, *Eine Kindheitserrinnerung des Leonardo da Vinci;* Oskar Pfister, *Die Frömmigkeit des Grafen Ludwig von Zinzendorf;* Max Graf, *Richard Wagner im "Fliegenden Holländer": Ein Beitrag zur Psychologie des kunstlerischen Schaffens;* S. Freud, *Die zukünftigen Chancen der psychoanalytischen Therapie; Ueber "wilde" Psychanalyse; Die psychogene Sehstörung in psychoanalytischer Auffassung; Ueber den Gegensinn der Urworte; Beiträge zur Psychologie des Liebeslebens;* J. Sadger, *Aus dem Liebesleben Nicolaus Lenaus: Schriften zur angewandten Seelenkunde;* S. Ferenczi, *Introjektion und Uebertragung;* E. Jones, *The Action of Suggestion in Psychotherapy;* A. A. Brill, *A Contribution to the Psychotherapy of Everyday Life;* J. J. Putnam, *Personal Impressions of Sigmund Freud and His Work;* Karl Abraham, *Giovanni Segantini, ein psychoanalytischer Versuch. Terminology in the Field of Sensation* (p. 444): KNIGHT DUNLAP. *Book Reviews:* A. Wreschner, *Das Gedächnis im Lichte des Experiments:* S. POWER. Louis Lombard, *Observations d'un musicien américan:* J. FIELD. A. Lemaître, *La vie mentale de l'adolescent*

et ses anomalies: FRANCIS JONES. E. E. R. Mumford, *The Dawn of Character: A Study of Child Life:* O. PERLER. Wilhelm Wundt, *Kleine Schriften:* E. B. TITCHENER. *Handbook of American Indians North of Mexico,* edited by F. W. Hodge; G. Fowke, *Antiquities of Central and Southeastern Missouri;* Frances Densmore, *Chippewa Music:* J. FIELD. Ikbal Kishen Sharga, *Examination of Professor William James's Psychology:* S. POWER. Elizabeth Morison and Frances Lamont, *An Adventure:* J. WATERLOW. C. R. Lomer, *The Concept of Method;* I. Scott, *Controversies over the Imitation of Cicero:* W. FRANCIS. O. Bumke, *Ueber die körperlichen Begleiterscheinungen psychischer Vorgange:* FRANCIS JONES. Ottmar Rutz, *Sprache, Gesang und Korperhaltung: Handbuch zur Typenlehre Rutz:* A. ISAACSON. A. Gregor, *Leitfaden der experimentellen Psychopathologie:* W. ASHER. Robert Hichens, *The Dweller on the Threshold:* WM. ERSKINE. Joseph McCabe, *The Evolution of Mind:* P. E. WINTER. J. Mourly Vold, *Ueber den Traum: experimental-psychologische Untersuchungen:* J. FIELD. Caleb W. Saleeby, *Parenthood and Race Culture: An Outline of Eugenics:* C. R. HUGINS. Hudson Maxim, *The Science of Poetry and the Philosophy of Language:* MARLOW A. SHAW. Nos. 12–19, *Bibliothèque de psychologie expérimentale et de métapsychie:* JAMES FIELD. Havelock Ellis, *The World of Dreams:* OTTO PERLER. *Book Notes. Dr. Edmund Montgomery.*

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NOTES AND NEWS

ALL friends of anthropology will rejoice to learn that after an interval of some years Professor Baldwin Spencer has resumed his researches among the aborigines of Australia. The following particulars as to his work and his plans are extracted from a letter addressed to Dr. J. G. Frazer on the 13th of last September. The Commonwealth government of Australia is about to undertake measures for the settlement of the Northern Territory, and during the present year it sent a small party to make preliminary investigations in that region. The leadership of the party was entrusted to Professor Baldwin Spencer. They went to Port Darwin, and thence across to Melville Island; then they returned to Port Darwin and traveled south about two hundred miles, after which they crossed the continent to the Gulf of Carpentaria. Amongst all the tribes examined by the expedition the belief in the reincarnation of the dead is universal; and the same is true of the notion that sexual intercourse has nothing, of necessity, to do with the procreation of children. "The latter fact," says Professor Spencer, "is interesting, because we now know that this belief exists amongst all the tribes extending from south to north across the center of Australia." On the other hand, Professor Spencer found among these northern tribes none of the *intichiuma* or magical ceremonies for the multiplication of the totems which form so important a feature in the totemism of the central tribes; nor could he discover any restrictions observed by the natives in regard to eating their totemic animals and plants. "The absence of *intichiuma* ceremonies," he adds, "is doubtless to be associated with the fact that the tribes in the far north live under conditions very different from those of the central area. They never suffer from drought or lack of food supply. This seems to show that the *intichiuma* ceremonies are a special development of tribes that live in parts such as central Australia, where the food supply is precarious." In one or two tribes along the Roper River a very curious totemic system was discovered. Among these people a man must marry a woman of a particular totem, but the children take a totem different from both that of their father and that of their mother. For example, a man of the Rain totem must marry a woman of the Paddymelon (a species of small kangaroo) totem, and their children are of the Euro (a species of kangaroo) totem. Again, a Porcupine man marries a Lizard woman, and their children are Bats. In these tribes each exogamous class has certain totems associated with it, and the natives are convinced that the spirit children know into what woman they must enter, so that the offspring shall have the proper totem. Everywhere, too, among the tribes met with by the expedition, the women and children believe that the sound of the

bull-roarer is the voice of a great spirit who comes to take away the boys when they are initiated; but during the initiatory ceremony, when the boys are shown the *churinga* for the first time, they are informed that the noise in question is not made by a spirit, but by the *churinga,* or bull-roarer, which was used in the past by one of the mythical ancestors of the tribe. Lastly, Professor Spencer could detect among these tribes no trace of anything like a belief in a supreme being. On the whole, he considers that, with minor variations, the beliefs of these northern tribes are closely similar to those of the central tribes. Professor Spencer hoped to start about November 1 for another expedition to Melville Island, the inhabitants of which he is particularly anxious to study, as they are as yet virtually uncontaminated by European influence. His intention is to reside among them till February. All anthropologists will look forward with keen interest to the publication of Professor Spencer's fresh inquiries in this promising region. It is much to be regretted that his former colleague in research, Mr. F. J. Gillen, has been prevented by the state of his health from taking any part in these investigations.—*The Athanæum.*

MR. SALOMAN REINACH writes in the October number of the *Quarterly Review* of the present condition and progress of the science of mythology. He explains how the researches of Grimm and Mannhardt rendered insufficient such theories as those of Fontanelle, De Brosses, David Hume, and Dupuis, causing them to be succeeded by the speculations of Kuhn and Max Müller. After these came the theories of the present-day anthropological school popularized by Mr. Andrew Lang. The anthropological theories were more or less of a revolt against the philologists, due in part to the advance in philology itself. The colonial policy of England has provided also a fortunate influence in so far as it tended to expand the field of study beyond the Arian gods so as to take in the religions of savage peoples. The methods of the anthropological school, however, as practised by Robertson Smith and Mr. J. G. Frazier, are already disputed by psychologists and sociologists.

IN the course of lectures which Professor Bergson has just concluded at University College, London, the lecturer maintained that the functions of the brain are to form habits, to focus attention upon the material world, and to connect the present with the past. The sharp distinction between spirit and matter was deprecated, the only difference between them being, according to Bergson, a difference of duration.

PROFESSOR ALFRED BINET, whose death at the age of fifty-four years has been reported, was director of the laboratory of physiological psychology at the Sorbonne and was an enthusiastic student of the problems of child psychology. He founded *L'année psychologique* in the year 1898 and contributed many important articles of his own to that journal. His latest publication was "Les idées modernes sur les enfants."

A COLLECTION of essays by William James entitled "Essays in Radical Empiricism" is promised early in the year by Longmans, Green, and Co. The book is edited by Professor Ralph Barton Perry, who writes the preface.